

A Description of a New *Helminthoglypta* s.s.  
(Gastropoda: Pulmonata: Helminthoglyptidae)  
from San Diego County, California

by

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*Abstract.* A new species of land snail, *Helminthoglypta fairbanksi* Reeder & Miller, is described from San Diego County; its relationship to *H. tudiculata* (Binney, 1843) is discussed.

INTRODUCTION

FROM ABOUT 1931 UNTIL 1964, the late Wendell O. Gregg explored innumerable mountains and canyons, forested slopes and desert rock piles of central and southern California for existing populations of land snails. Many of these populations were found to be of undescribed species. During the last eight years of that period, one of us (WBM) had the good fortune to accompany Gregg on his field explorations and to acquire, shortly before his death in 1979, all of his undescribed lots of shells as well as anatomical whole mounts.

We are gradually revisiting localities to determine the current status of the populations of undescribed species as well as to obtain more detailed habitat data. One recently visited population of an undescribed species of *Helminthoglypta* in northwesternmost San Diego County was found to be thriving. It is described below.

*Helminthoglypta (Helminthoglypta) fairbanksi*  
Reeder & Miller, spec. nov.

(Figures 1-4)

**Diagnosis:** A large, globose *Helminthoglypta* with the shell heavily malleated and a closed umbilicus; anatomy as in *Helminthoglypta* s.s.

**Description of shell of holotype:** Shell large, globose, imperforate, with conic spire. Color olive-brown with a darker brown band on the rounded shoulder. Aperture broadly elliptical with the peristome thickened and moderately reflected. Embryonic whorls  $1\frac{1}{3}$  with faint indications of radial growth wrinkles. Post-embryonic whorls with increasingly prominent radial growth wrinkles which become an elaborate series of anastomosing ridges resulting in profuse malleation on the penultimate and body whorls, the malleations being elongate radially and continuing onto the base of the shell. Diameter 34.3 mm, height 12.3 mm, number of whorls  $5\frac{3}{4}$ .

**Reproductive anatomy:** The reproductive anatomy is typical of the subgenus with a capacious atrial sac with a large dart sac at its proximal end. There are two mucous glands with mucous bulbs, the ducts of which unite to form a single duct before entering the upper end of the atrial sac. The spermatheca is large, spherical, with a long duct and a long spermathecal diverticulum originating about midway along the length of the duct. The penis and epiphallus form a continuous duct, the epiphallus with a caecum of moderate length. The penis is divided into a long upper penis and a short lower penis, the former being a double-walled tube. The proximal half of the upper penis is wide, tapering to its junction with the epiphallus

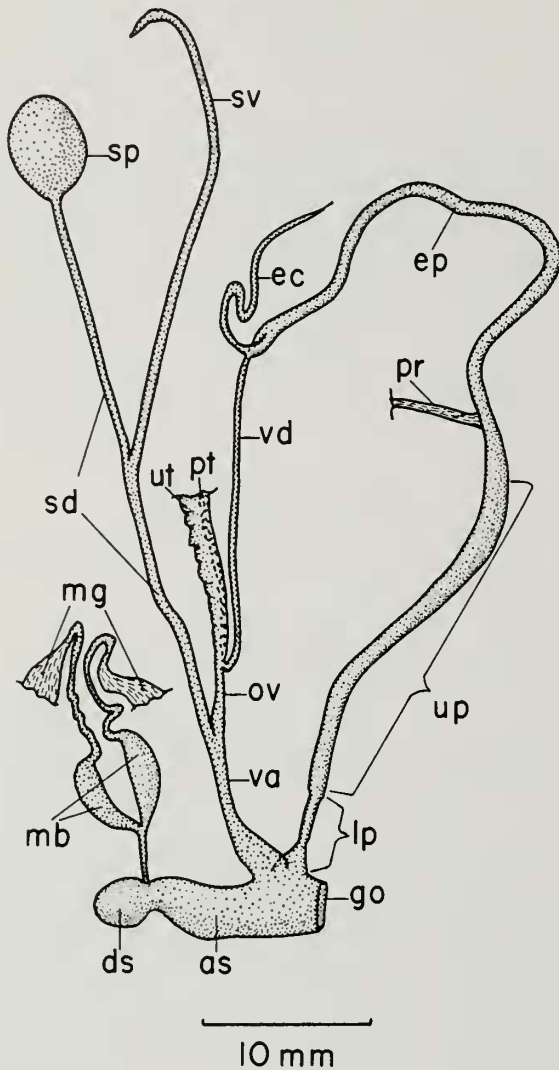


Figure 1

Portion of reproductive system of *Helminthoglypta fairbanksi* Reeder & Miller prepared from projection of stained whole mount of holotype SBMNH no. 34002. as = atrial sac; ds = dart sac; ec = epiphallal caecum; ep = epiphallus; go = genital orifice; lp = lower part of penis; mb = mucous gland bulbs; mg = mucous gland membranes; ov = oviduct; pr = penial retractor muscle; pt = prostate; sd = spermathecal duct; sp = spermatheca; sv = spermathecal diverticulum; up = upper part of penis; ut = uterus; va = vagina; vd = vas deferens.

and tapering also to the more narrow distal half of the upper penis. The lower penis is of similar diameter to the distal half of the upper penis. The vas deferens passes around the dart apparatus and the penial retractor muscle inserts on the epiphallus. Measurements of distinctive structures are as follows:

penis	28.3 mm
epiphallus	37.8 mm
epiphallal caecum	17.0 mm
spermathecal duct	32.5 mm
spermathecal diverticulum	32.3 mm

**Variations in paratypes:** A total of 15 adult and 15 immature shells was examined. The largest adult paratype measures 34.2 mm in diameter and 25.6 mm in height, and the smallest measures 29.1 mm and 23.5 mm respectively. All of the specimens examined exhibit the marked malleation described for the holotype. One adult and one juvenile show a few faint, incised spiral lines on the third whorl. Three adults and nine juveniles show isolated areas of thinner ridges forming small, somewhat circular patterns superimposed on the larger ridges of the principal sculpture. These areas are confined to the body whorl.

**Disposition of types:** Holotype: Santa Barbara Museum of Natural History no. 34002. Paratypes: The Academy of Natural Sciences of Philadelphia no. 359671; U.S. National Museum no. 849003; W. B. Miller collection nos. 4184, 7442, 7444; R. L. Reeder collection no. 569; H. L. Fairbanks collection no. 460.

**Type locality:** San Diego County, California; oak woodlands along DeLuz Creek and adjacent to DeLuz Road from 1.0 to 1.7 miles (1.6–2.7 km) south of DeLuz; 33°25.5'N, 117°19.4'W; elevation 90 m (300 ft).

**Discussion:** *Helminthoglypta fairbanksi* is most closely related to *H. tudiculata* (Binney, 1843) from which it differs only in shell characters, namely its prominently raised wrinkles around each malleation, and its consistently closed umbilicus. Although *H. tudiculata* is common in other parts of San Diego County and in nearby Riverside County (e.g., Dripping Spring), no populations showing intergrading characters between *H. fairbanksi* and *H. tudiculata* have ever been found. *H. fairbanksi* has apparently speciated in isolation along the watershed of DeLuz Creek and Cottonwood Creek where it is sympatric with *H. traskii traskii* (Newcomb, 1861).

**Distribution and habitat:** In addition to the type locality south of DeLuz, *Helminthoglypta fairbanksi* has been found along the northwest side of DeLuz Creek, 0.2 miles (0.32 km) north of DeLuz and a few miles northwest of DeLuz at a point 4.2 miles (6.8 km) SE of Tenaja Campground, 3.2 miles (5.2 km) northwest of DeLuz Road and Tenaja truck trail.

Vegetation at the type locality consisted principally of *Quercus agrifolia* and *Rhus diversiloba*.

**Etymology:** This species is named for H. Lee Fairbanks, friend and colleague who accompanied us in our efforts to obtain additional live specimens.



Explanation of Figures 2 to 4

*Helminthoglypta fairbanksi* Reeder & Miller, spec. nov. Shell of holotype, SBMNH no. 34002; diameter 34.3 mm. Figure 2. Aperture view. Figure 3. Apical view. Figure 4. Umbilical view.

#### ACKNOWLEDGMENTS

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